

Rudder  ON  Series



Hints to Young Yacht Skippers



Fred H. Taylor







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# Hints

TO

# Young Yacht Skippers

BY

THOMAS FLEMING DAY

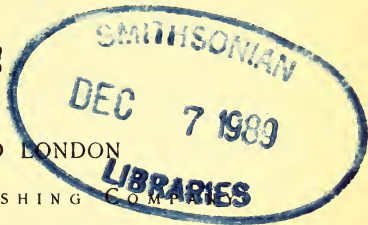
EDITOR "THE RUDDER," AUTHOR OF ON "YACHTS AND YACHT HANDLING,"  
"SONGS OF SEA AND SAIL," ETC.

*Illustrations by Warren Sheppard*



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TO  
THE OFFICERS AND MEMBERS  
OF THE  
SPRINGFIELD YACHT CLUB



## INTRODUCTION.

THIS book is the response to a constant appeal for information. During the last nine years I have received thousands of letters, asking for hints on all manner of subjects relating to the care, handling, buying and equipping of small yachts. The majority of these letters came from boys and young men living throughout the world, who were just entering the sport, and who were anxious to become skillful sailors and competent skippers. I can thoroughly understand their position, and sympathize with their desire for fuller and more practical knowledge than that contained in the majority of works upon yachting.

What knowledge I possess of this art, or profession, I have gained by years of hard work and close observation, and having begun my studies when very young can testify to the dearth of literature of value to the green hand, who is looking for practical hints that will help him to become a skillful yacht sailor. Had I possessed a book like this, it would have saved me time, money and lots of hard work and anxiety.

But, in using this book, it must be remembered that a hint is not a law or a command, it is simply a concise statement for you to take, think over, and make use of, if it appears to be logical and practical. There may be better and easier ways of doing many of these things I speak of—that is for you to find out. I am an authority only as far as my knowledge goes, and no further. The basis of my authority is my years of observation and experience; your right to confute my findings can only be based on similar premises. Unless you have tried and proved that my instructions are wrong, they are still good medicine.

If a man, especially a young one, decide to go into yachting, he should also decide to learn the business of handling these craft from the keel up. It is not sufficient, as many of you think, that all that is necessary is to learn how to sail a boat about. You should know not only how to sail her, but you should know why she sails, and all about the gear and canvas used to propel her. You should learn to rig and unrig, to care for and to understand every part of her structure, both above and below decks. It is certainly a sorry spectacle to see a man sailing a yacht who cannot tie a proper knot, splice a rope, or bend a sail, and who does not know the terms used to



designate parts of the structure which he essays to manage. If he is ashamed to learn, or if he is too lazy to gather such knowledge, he is out a place in a sport which is the life and joy of energetic, skillful and brave men.

I hope all of my boys the world over who are coming into yachting, and to assist whom I have written these words, will never be ashamed to learn the sailor's trade, or be too lazy to acquire all possible knowledge relating to the art of handling vessels. You will never regret having given your time to the study. It will bring to you that which is more valuable than the treasures of the earth; something that you can never be deprived of, no matter how unlucky or how unfortunate you may be—the respect paid to the skillful by the unskillful; the deference shown to the educated by the ignorant.

It is as well to say here that these hints are not intended for men owning and sailing large yachts. Such vessels are too costly to be trusted in the hands of any men except those who are thoroughly competent; and if an owner has not sufficient skill to handle a large yacht it is his business to hire somebody who has. These hints are intended for the small-boat owner and skipper.



## HINTS TO YOUNG YACHT SKIPPER

### BUYING A BOAT:

If you are going to buy a boat, either the first or last one, make up your mind thoroughly as to what kind of a craft you want, and what you want her for. If you want to race, it is one thing; if you want to cruise, another. Combination cruising and racing boats are impossibilities, and are neither one thing or other. If you are going to build, get a good design from some man who knows his business, and have a boat built from it in the best manner possible. A poorly or cheaply-built boat is a losing proposition. If you are going to buy a second-hand craft, and don't know much about boats, get a man who does to look over any that you think of purchasing. An honest builder is the best man for this. Most men buy a racer for her record, and a cruiser for her cabin. The record of a racing craft is not worth a pinch of salt, unless the boat is in such condition as will enable her to up-

hold it, and a cabin of a cruiser is of little value unless it is surrounded by a good, seaworthy and handy outside.

#### BUYING A RACER:

Before buying a racer, find out if she is suitable for entering in any of the classes racing in the waters you frequent. Find out what boats are likely to sail against her, what her measurement is under the rule in vogue, and how and by whom she was handled when winning or losing. These are very necessary points, if you hope to helm a winner. Many a fast boat is condemned and sold after the first season, because the man who owned it did not know how to handle her to win. Such a boat can be bought and, if properly managed, be made a winner. Others are sold because they have no earthly chance of getting a prize, no matter how well-sailed. These latter are a very bad investment.

#### BUYING A CRUISER:

If you want a cruising boat, her record is of no consequence, unless it is irretrievably bad. If she has a habit of capsizing, or won't go to windward, you don't want her. If she consistently leaks, you don't want her.

If she draws a lot of water for her length, and can't get into your harbor except at high tide, you don't want her. If she is in bad repair, or is very old, you don't want her. If you haven't sufficient personal knowledge to tell by looking at her how she will handle, ask some man who has sailed her, or who has seen her sail; better ask several, and take a general average of their testimony. Then go and have her thoroughly looked over. If she is hauled out, sound her bottom. Get the owner to let a builder bore her. If the chips come out clean, white and papery, she is sound in plank. Examine the rabbet at stem and stern and all along the keel; pierce that stick, both inside and out. Sound the mast. Go below and look at the heels and heads of the frames. Don't forget the deck, cockpit floor and staving. An experienced man can tell from the appearance of the unpainted wood whether it is sound or not. Then examine her spars, gear, blocks and sails; last of all, her cabin fittings, etc.

#### BUYING A BOAT AFLOAT:

This is somewhat of a lottery, but you can generally judge of the condition of a boat's bottom by the condition of her topsides, and by inspecting the inside of the



hull. If there is any water in the bilge take some up in a glass. If it is clean and fresh-smelling, you can be sure she has a regular leak. Get a quiet look at the sucker of the pump-rod. If it looks well-brightened up, it shows plenty of usage. If there is no leak, notice the heels of the frames near the mast, also the fastenings of the ends of the deck beams in that part of her. If she strains, it will show there, if anywhere. If there are doors in the bulkheads or lockers, see if they have been planed off, so as to close. If she is canvased on deck or top of cabin-house, the cloth will show if she has strained badly. All boats strain to certain extent, and without seemingly permanent harm.

#### BUYING FROM FADS:

I once knew a lady who would not buy a house, because she did not like the way in which the halls between the rooms were painted. Some yachtsmen are just as bad. Last year I met a young fellow who wanted a knockabout with a white enameled cabin. He refused to take several, because they lacked this inside coating. Others will be caught by a lot of brass or gaudy cushions and curtains. Nicely varnished spars, parceled backstays

and immaculate sail covers, are other and successful traps. Others will buy a boat because a friend has one like it.

#### BUYING FROM REASON :

The first and most necessary thing is that the vessel's bottom be sound ; the second, that the decks be tight ; the third, that the spars are in good condition. If she is right in these three points, you can find out the rest by sailing her, and in that way only. Many a good boat is condemned for some trivial cause. She may have a leak which can be easily stopped ; her sails may be poor, that can be remedied ; or her gear worn out. If so, give the seller a chance to make good before breaking off negotiations. Tell him what you see or think is wrong, and let him have a chance to explain or make good. Don't go away, as many do, and blackguard a boat because it is not just in the order or condition you expected to find it.

#### BUYING OUT OF REPAIR :

Sometimes a boat out of repair can be bought cheap, and is a good bargain. But, before buying, consult a builder, and find out if the craft can be repaired, and if it is worth repairing. I have found that you can generally

trust a builder's word on this question, as they dislike to work over a worthless craft. If the builder tells you she is no good, don't touch her, no matter how cheap she is offered.

#### BUYING THROUGH A BROKER :

I strongly advise young yachtsmen to buy their boats through a broker, if it is a second-hand craft. These men are up to all the tricks of the trade, and are thus able to safeguard a client's interests. If the boat is registered, they will attend to the custom-house part of the transaction, and get the thing put through properly, besides saving you endless bother. If she is not registered, they will get you a proper bill of sale, and see that the boat has no liens or mortgages lying against her. I have known several cases where men have bought and paid for boats only to find that the vessel was mortgaged, or else somebody unknown was a part owner.

#### INVENTORY :

Be sure and get a written inventory before buying, and have it checked off before making the final payment. It is, I regret to say, a too common practice among some sel-

lers to skin-out a boat before delivering her. Or, if this is not done, to substitute cheaper articles for the ones on board. It is also frequent for purchasers to call for things that are not on board, and which they suppose or think ought to be, and this leads to a disagreement. A written inventory will settle the question; verbal statements are worthless.

#### NAUTICAL INSTRUMENTS, CHARTS, ETC. :

Nautical instruments, charts, books, private flags, clothes, etc., are personal belongings, and are not part of a boat's fittings or furniture, unless so specified in the inventory. A compass is, if it belongs in a vessel's binnacle. A dingey or other boat if used by the yacht as a tender goes with her, unless there is an agreement to the contrary. Spare spars, sails, ballast and anchors, even if stowed on shore and not used, belong to the boat, and are included in the sale, unless otherwise specified.

#### BOAT'S NAME :

If a boat is registered, you cannot lawfully change her name, without the permission of the Customs. All registered vessels must have their name and port painted on



MAKING SAIL.



them. The name of a boat is not necessarily sold with the craft, but the former owner cannot prevent you from using the old name if you wish to, unless you have made an agreement before buying not to do so; nor can he prevent you from changing the name.

#### MASTS:

If for any reason you remove your mast, be careful to note its position, so that it can be put back again as it was before. If wedged, mark the wedges before taking them out, so you can put them back again in their proper places. The rake of a mast has frequently much to do with a boat's good sailing.

#### MASTS:

To remove a mast, if you have no shears convenient, place another boat with a mast as tall, or taller than yours, close alongside, and lash her fast. Then place a sling round the mast to be removed in such a position as you think the stick will balance. To this hook in the throat halyards of the assisting boat. Remove the wedges, and if the fit in the partners is tight well-grease the houseings. Then send a man in forward with a sharp-edged bar and

let him pry the heel out of the step as you hoist on the halyard. Use your own halyards as guys to steady the spar. Keep the spar steady; if allowed to fall over it will very likely split the partners. You can step a mast by reversing this method.

### BOOMS:

Booms are frequently sprung and spoiled by hauling down hard on the sheet and pulling up the lift. The boat being left at anchor, it rains; the ropes shrink, and the end of the spar is pulled up and the spar sprung out of shape. Do not set up taut on your lift if it looks like wet weather.

### RIGGING ON RACING CRAFT:

The less running rigging you have on a racing craft the better, as a complication of tackle, lifts, sheets, etc., make it more difficult to handle sails quickly. Use as simple tackles as possible, and have as light gear as will do the work. The running rigging of a racing yacht should be constantly looked to, and at the first sign of weakness be replaced by new.

## HOOPS :

Hoops, to work easy, should be quite some bigger than the mast. Grease the foreside of the spar frequently, and they won't stick when hoisting. If you don't like grease, you can keep them from sticking by taking a piece of small line and with it linking them together by clove-hitching each one. In this way they will be kept horizontal when being hoisted. Always put on several more hoops than there are grommets for, so that if one breaks you can replace without removing your rigging.

## BLOCKS :

Don't buy or use cheap blocks ; they are the worst investment you can make, as they will be an endless source of trouble. Don't use blocks with sharp edges to the shell, as they will soon fray and strand your gear. It is a common practice of riggers to put on a block the swallow of which will just carry a certain sized rope ; consequently, when the cordage gets wet and swells, it sticks, and the sail won't come down. This generally happens in bad weather, when you want things to run smoothly. Always have the swallow bigger than the rope, by at

least one size. For instance, if using a 12-thread rope, have the block made to carry a 15-thread.

#### SPINNAKER POLE, HOW TO RIG IT FOR RACING:

To rig a spinnaker pole for racing, when the stick is not too heavy to be lifted and handled by two men, have at the head or outboard end a band, or grommet, with three eyes, one on top and one on each side. Put snap-hooks on your guys, so that all gear can be quickly removed from the pole. Have snap-hooks on both ends of your halyard. Make your halyard fast on each side in the rigging.

#### SPINNAKERS:

If you have a forehatch, after stopping the spinnaker coil it snake-fashion right under the opening. Screw a hook to the underside of the deck, where it can be readily reached, and hook the head of the sail to it there. When wanted the tack man can reach it without getting up or jumping below. It is frequently necessary in order to make a quiet move to get this sail ready without your rival knowing what you are up to.

## SPINNAKERS :

These sails are of little or no use if the boom cannot be carried square to the length ; the minute they have to be guyed forward they lose their power, and it is better to take them in and use the balloon headsail. Do not haul the tack of the sail hard down ; let it light up and leave an opening between the luff and the mast. Spinnakers cut with a deep roach, so as to hang below the pole, are no good. Remember, that the spinnaker is a depressing, not a lifting, sail, as many suppose, and has a tendency to force a vessel's head down, unless the sheet is lighted up.

## SPINNAKER, TO SHIFT ONE FROM SIDE TO SIDE :

If a light pole, this can be easily and quickly done. Let go the after guy and swing the pole forward ; unship the heel and run the pole aft along the deck on the side you want to set it, being sure to keep it clear until the head is abaft all sheets, etc. Have the other end of the halyard ready, let go the sail, cast off one end and snap in the other end, and hoist away. While those forward are doing this the after man can carry the guy over and pass it forward outside the rigging. Then shove the

pole out right ahead, ship the heel, and haul aft the guy. By being able to shift a spinnaker quickly you can frequently manage to get away from a rival who is following close in your wake and blanketing you. It is a manoeuvre that should be constantly practiced by a racing crew.

#### SPINNAKER, TO SET A, WHEN RIGGED WITH A LIFT :

If your pole is carried aloft, lower it down by the lift, and square with the fore and after guys. Hook the clew to sheet or outhaul, and the head to the halyard, hoisting and hauling out at the same time. When in position break out. To take in, haul the foot in first and muzzle the sail before letting go the halyard.

#### SPINNAKER POLE :

As soon as you are through with the spinnaker pole, unsnap the guys and coil them up. In this way you keep them in readiness for instant use on either side, and free the pole of all incumbrance. A spinnaker pole carried on end with all its gear is a nuisance on a small boat, besides adding to the weight and windage aloft.



REACHING.

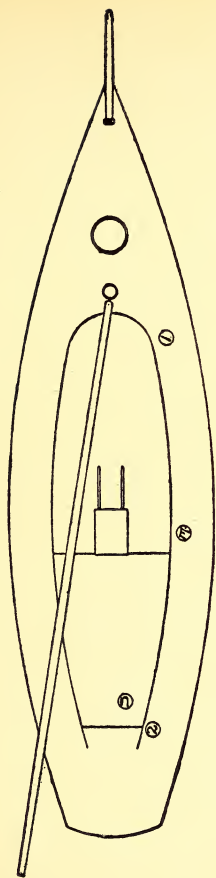
## CREW, STATIONS FOR :

In handling sails the crew should be given certain stations, and taught to keep them. Each man should be allotted a certain task, and be instructed to attend to that, and not to interfere with the others. If you have a crew of four, including yourself, your place is at the helm; the man in your watch stays with you in the cockpit, or aft, unless called forward; the mate and his watch work forward. The lightest man is the tackman. His business is to take the tack of the sails. He always works furthest forward, going out on the bowsprit to snap on jibs, etc. The mate works behind him attending to the halyards and gear about the mast.

## CREW STATIONS FOR GETTING UNDERWAY :

When making sail, the mate and the tackman go to the main halyards, one taking the throat and the other the peak. The skipper and his watch look out for the lashings, crotch, sheet, and see the gaff clear of the lifts. If the boat is a yawl, they cast loose and hoist the mizzen, the mate and tackman attending in the same way to the headsails. The after guard looks after the jib sheets and backstays, the forward gang get the anchor and cat it,





CREW STATIONS—ON THE WIND RACING.

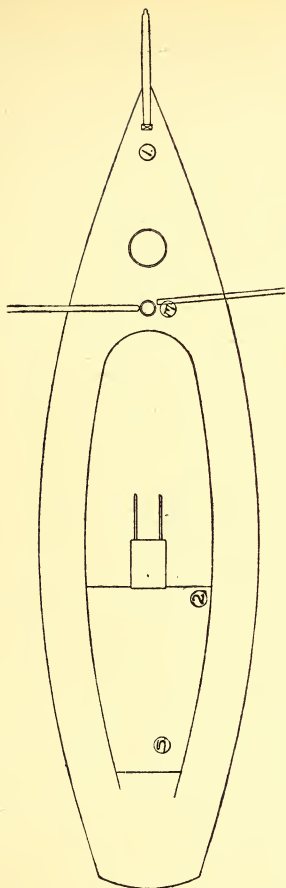
standing by forward until she is properly cast and underway; then they clear up decks.

#### LIGHT SAILS, HANDLING:

The handling of light sails is the best measure of the merits of a crew. The bungling of light canvas shows that the crew are not properly drilled, and that the skipper is a muff, or else is slack in attention to his duties. Nothing looks prettier than to see running sails handled quickly. To do this it is necessary to thoroughly drill your crew at stations, and to practice them in setting, shifting and taking in the light sails.

#### CREW STATIONS FOR REEFING:

The mate and tackman go to the halyards; the man aft stands by the peak downhaul, if necessary, after getting the sheet in. When the sail is down the skipper and his watch take the pendant, and after the tackman has tied in haul the foot of the sail out, the mate standing amidships and helping by lighting the cloth along. When properly hauled out the skipper or his man pass the clew lashing. Then all hands tie in, the mate and tackman working from the middle of the boom forward, the others aft. Then the mate and his watch hoist the sail,



CREW STATIONS—TO SET SPINNAKER.

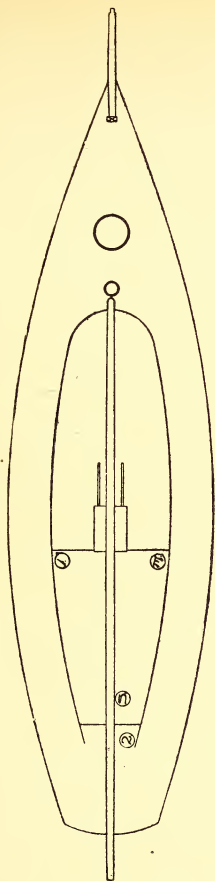
those aft keeping it clear of the lifts, and working the sheet.

#### CREW STATIONS FOR SETTING A SPINNAKER :

Get the boom along on the side you want to use it, with the heel aft and the head just forward of the rigging. See that it is clear of the jib sheets. Take your after guy outside the rigging and snap it into the grommet, or eye, on the spar. Snap in the fore guy, if you use one, and place the coil in the bow. When ready, let the tackman snap the halyard to the head, being sure there are no turns in the sail; then the mate, who has the halyard, can hoist away. When the sail is up belay the halyard and snap in the clew of the sail in the grommet or eye on top of the boom, at the word "ready!" the tackman and mate seize the pole and shove it out right ahead, until the latter can ship the heel. At the order from the mate, "haul aft!" the man in the cockpit hauls on the after guy until the boom is square. The tackman stands by the fore guy and the mate seizes the tack and breaks the sail out. To take in reverse these proceedings.

#### SAILS :

Sails, if not used, should be frequently cast adrift and



CREW STATIONS—TACKING OR WEARING.

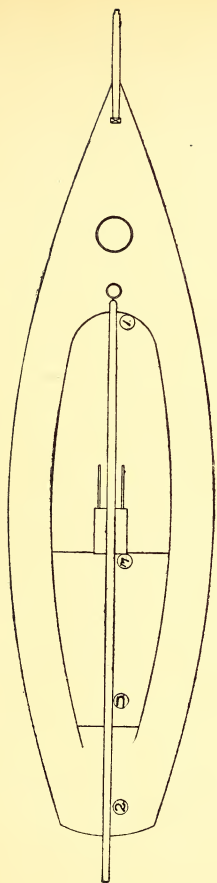
aired. Light sails stowed below, either in bundles or bags, should be attended to in this manner. It is best to have your headsails fitted with snaphooks, so they can be taken off and stowed below.

#### SAILS:

Sails are not made of iron; neither are they made of rubber. Canvas, especially when new, should be treated with gentleness. It is very easy to spoil a sail. More bad sails are made by yachtsmen than by sailmakers. When bending a new sail haul it out along the spar hand-taut and lash it. Then let the wind stretch it out, you taking up the slack day by day. As it comes, you can put more strain on it until it reaches its proper place. In damp weather, ease it in at the head and foot.

#### SAILS:

When measuring your boat for a suit of sails, do not try to put on every inch the spars will carry. Leave plenty of drift between the hoist and the block and a good length at the end of each spar. This will give you a chance to properly stretch your canvas. The foot of all sails should be kept well up off the deck, so as to allow plenty of room for the wind to escape from under them. Also, keep the leach of the headsail away from the mast.



CREW STATIONS—REEFING.

Sails should never be made to lap if it is possible to sheet them without doing so.

#### SAILS :

Take the same care of your sails as you do of your best suit of clothes. When you get a new suit, you don't start in by stretching the back of the coat, and by pulling like mad on the legs of the trousers. Canvas is woven just as cloth is. When you put your clothes away you don't roll them up in a tight ball and leave them in a damp place for days at a time. Remember this.

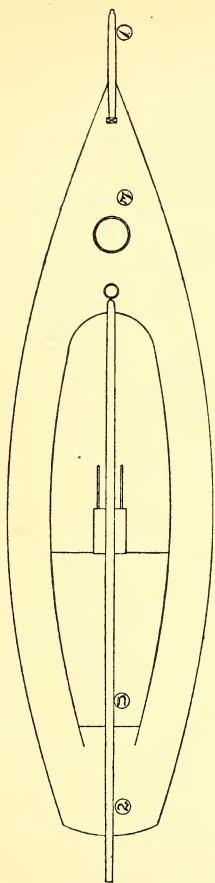
#### HOISTING SAILS :

The luff of a mainsail should be pulled on until it is taut, but it should never be sweated until the bolt-rope is nigh to parting. The peak should be hoisted until the proper draft appears in the luff. In light airs a better draft will be had by slacking both peak and luff and by hauling up the weather lift, so as to take the weight of the boom off the canvas. The lighter the wind the more baggy your sail wants to be.

#### STOWING SAILS :

If you are not going to stay on board, do not stow





CREW STATIONS—SETTING OR SHIFTING HEAD SAILS.

your sails in tight rolls; make up loosely and tie well; but be sure that the air can get at the canvas. It is the weather, not work, that wears out sails.

#### SAIL COVERS:

Sail covers are the sailmaker's best friend. They destroy more sails than any other one thing. If a boat has a crew always on board, or someone constantly near to look after the canvas, they are very useful contrivances, but should never be left over sails for days at a time; the moisture collects under them and rots the cloth.

#### STORM JIBS:

Storm jibs, as shown in most sail plans, are altogether too small, and are of no use whatever. When a sail of that size would be any good it would be blowing too hard to use any canvas forward of the mast. A storm jib wants to be big enough to give the boat some life. To do this it must have a pull to it. They should be roped heavily, and have good strong clew pieces and irons. The only way to set them is flying.

#### SHIFTING JIBS IN HEAVY WEATHER:

If you have to shift jibs in a blow, with a heavy sea

running, it is an extremely difficult and sometimes dangerous job. The jib you are going to set should be stopped up, as it is much easier to handle in that form. In getting in a jib at such times be very careful about how you slack off the sheet, as men are frequently knocked off a spar or hurt by the sheet being let fly while they are on the bowsprit. Don't have any more men forward than are actually needed to shift the sails, as their weight will depress the boat's head and make it wet working.

#### COILS OF GEAR :

If your running gear is stowed around the mast when underway in bad weather, it is a good plan to trice the coils up in the rigging. Here it will not get washed loose and tangled up, and can be readily found and handled. Gear in the coil should always be kept clear for running ; nothing looks worse, or is worse, than a mess of halyards lying about a boat's deck or cockpit. Teach your crew to always coil down the gear at once, and to always turn the coil over, so that it will run clear when let go.

#### RUNNING GEAR :

The ends of all halyards, sheets and lifts should be made fast, if you are going to sail at night, or in rough

weather, as they are liable to get adrift and cause a lot of trouble before being recovered. Frequently, when letting the sail run in a hurry, the halyards will bunch and go aloft; if the end is fast you can easily recover them. The readiest way to make the end fast is to open the strands and pass the pin or cleat through the rope.

#### RUNNING RIGGING:

The length of life of your running rigging can be increased by turning the rope end-for-end, thus bringing a new part to work in the blocks. Sheets are apt to wear and strand where they play in the block when the boat is close-hauled.

#### JIB SHEETS:

If your jib sheets are rove double bring both ends aft and join them behind the cockpit; then the hauling part will not get away from you, and can always be found, even in the darkest night. Another way is to bore a hole in the cockpit rail, pass the end through and knot it.

#### PEAK DOWNHAUL:

In heavy weather always bend a peak downhaul. Take a long enough piece of good flexible manila and splice an

eye in it. Put this eye over the end of spar, and make the loose end fast to a lower hoop, or on the pin rail. With this downhaul you can control the gaff and get the peak down, no matter how hard it blows.

#### MAINSAIL HOISTING ON TRACK :

Sails having their luff running on a track up the mast will frequently stick, despite the assurances of the inventor and vendor of these patent devices. To insure working, keep the track well-greased, and let go the throat halyards before you do the peak, always keeping the gaff at a high angle while lowering down. In this way the weight of the gaff will force the slides down the track.

#### REEFING AT NIGHT :

If sailing at night, and it looks at all like bad weather coming, get in a reef in your large sail before dark, as you can do it then quickly and properly. If suddenly struck by a heavy wind you will have your boat better prepared to meet it.

#### REEFING :

If you carry an amateur crew you should constantly

practice them at reefing. Give each man his station, and teach him to keep it, and not interfere with the work of the others. It is a good plan when sailing on a breezy day to reef and shake out several times, as this will give your crew practice. A well-trained crew will reef a mainsail of a small yacht in less time than it takes to write this.

#### TACKS FOR REEFING:

Always keep a tack in your sail at each reef band. Take a short piece of small rope, whip both ends, pass this through the cringle, making each end the same length, then open the rope just under the cringle and pass the other part through it. Your tack will stay there and always be ready to tie down.

#### PENDANTS FOR REEFING:

These should always be kept rove, if the end of the boom is outboard. If the sail is a small one, put a snap-hook on the end that goes in the cringle, but do not trust hooks if the sail is heavy; splice your rope in.

#### REEFING:

When reefing a boom sail, before lying along make



WIND ABAFT THE BEAM.

sure that the mainsheet is fast, so that it cannot slip, as this happening is likely to throw you overside. If the boat is rolling badly it is best to secure the boom with a lashing from each side to hold it steady, as this will make reefing easier.

#### REEFING :

In a heavy seaway it is easier and handier to reef with all the sail down and the boat running broad off, as she will go along steady. It is very difficult to reef a boat when in the trough of the sea.

#### REEFING :

When hauling out the foot of your sail to reef do not pull it out too hard, especially if it is liable to get wet from rain or sea, as the cloth will shrink and pull the leach out of shape. Be sure and pass a good lashing around the pendant close to the cringle and, if there is room, through it. Don't haul out on your pendant until the tack is tied in.

#### REEF, SHAKING OUT A :

Set up on your lift. Cast off the points, beginning in the middle and working both ways. Then cast off the



tack and clew-crinkle lashing; then the pendant. Be sure all the points are loose before hoisting, as you are liable to tear the sail if one is fast.

#### REEFING BEFORE STARTING:

Before leaving harbor, if it looks breezy outside, tie in a reef, or reefs. When outside, and you can feel the weight of wind, you can then judge whether to carry more sail or not. If close-reefing, tie in number one and then number two over it. This will enable you to shake out one reef at a time.

#### RUNNING OFF:

When running off in heavy weather, if you have a jib keep it on her and haul it dead flat; then if she attempts to broach the wind hitting in the jib will drive her head off again. All boats going where winds are likely to be heavy should carry a small, strong headsail to use for this purpose.

#### RUNNING OFF IN A SEAWAY:

Keep your boom topped up, so that it is clear of the sea when she rolls to leeward. Don't give the sail too much sheet, as you will find that she will steer better if

the boom is at a smaller angle, and be less likely to be broken or to damage the rigging.

#### MAINSHEET :

Always keep a knot in the end of your mainsheet, or else make it fast. If the end gets away you will have trouble.

#### JIBING A MAINSAIL :

The only safe way to jibe in a breeze is to lower the peak and top up the boom, before getting the sail over. In ordinary airs you can jibe a boat if you pay attention to the helm, and get the sheet down flat. Let her come easy. If forced to jibe all standing with the sheet off, just as soon as the boom comes over put your helm, hard the other way, so as to throw the boat round, and get the wind back of the sail. This will break the force and save the knockdown, but is liable to break the boom. If fitted with backstays, look out for them.

#### WEARING A YAWL :

Slack off the mizzen sheet, if that sail is set ; haul your jib a-weather ; flatten the mainsheet ; put the helm up

and let her come round slowly, easing off the mainsail as she pays off.

### STEERING A YAWL:

Going with a strong current or tide through a channel, when there is no wind, you can steer a yawl by taking hold of the mizzen boom and working that sail from side to side. When beating to windward in a light breeze, with a strong tide under the lee, hauling the mizzen to windward will help a yawl considerably, especially if she is at all slack-headed.

### JIBING A YAWL:

Haul your mizzen if set fairly flat; slack the lee jib sheet and haul in the weather at the same time, until this sail is properly trimmed. Get your mainsheet aft gradually. Put the helm up slowly, and if the mizzen is set jibe that first, then the mainsail. The reason for trimming the jib and mizzen is this: If when the mainsail comes over she knocks down the other two sails will shoot her up in the wind, and give you a chance to shoot her out. If the mizzen is not set, light your jib sheets sufficiently to allow her to come up.

## COMING TO AT A DOCK :

If you have to come to at a dock or pier on the windward side, go well to windward of it, lower your sail, and steer straight for it. Have an anchor and warp ready aft, and when close enough to reach let go your anchor and pay out, checking her way as you near the structure.

## LYING AT A DOCK OR PIER :

It is always best to lie head or stern on to a dock if you intend to remain long or over night. Always run out an anchor to hold her off in case the wind shifts, or if for any reason you have to haul out. In making your head fast be sure to allow length enough, if in a tidal harbor, or you will be hung up when the water falls.

## CLUBBING :

This is one way of getting down a narrow fairway when a swift current is going with you. By employing it you will be able to keep off the banks and to dodge anchored vessels. Send a man forward and let him heave in on the anchor until it breaks, then let him keep it trailing along the bottom, checking the vessel whenever

needed, by paying out enough slack cable to make the hook bite. The skipper at the helm can then shear her with the rudder to port or starboard, as he wishes. The current moving faster than the boat will give her steerageway. Instead of an anchor you can use a heavy chain to drag along the bottom.

#### SAILING IN A CURRENT :

If bucking a strong tide or current a vessel will answer to the slightest touch of the helm, but if going with the stream she will steer slowly and badly. This must be looked out for in running narrow entrances between jetties and bars. Sometimes it is better to go out stern first, if the wind is blowing directly in, letting the vessel sail slowly before the wind and drop back faster with the tide.

#### SAILING AGAINST CURRENT :

In going against a strong current to windward you can force a vessel through, no matter how strong the tide is, if you can lay up close enough to get the wind on one bow and the tide on the other. The pressure of opposing forces will drive the vessel ahead. You will often see



IN HARBOR, DRYING OUT.

schooners get through the Long Island Sound Race in this way against a strong ebb, running over 5 knots.

#### TIDE UNDER THE LEE :

With the tide or current under the lee bow trim your after canvas dead flat, unless the sea is large. Let her eat out to windward on an easy helm, humoring to keep good way on all the time.

#### CURRENT, SAILING IN A CALM :

Going through a passage with a strong favorable current and no wind, lay your vessel broadside to the drift of the tide, then the speed of the stream will make a breeze in the sails and give your boat steerageway. Tack on approaching the shore, and stand over for the other, being careful to tack while still in the strength of the stream.

#### ANCHORED IN A CURRENT :

If at anchor in a current with the wind blowing against the tide, to keep the yacht from riding over her anchor, tie a bucket on a rope and drop it over the stern. This is a good way to keep a dingey away from a yacht's stern when tide-rode.

## HEAVING-TO :

To heave-to a vessel you must trim your sails so that the wind presses on one side of one sail and the other side of the other or others. In a boat like a sloop or yawl you can heave-to by drawing your jib a-weather, by slacking off the lee and hauling on the weather sheet. This causes the force of the wind in the jib to counteract the force in the after canvas. By slacking off the main-sheet until a balance of power is established between main-sail and jib a boat will lie almost in one place.

## LYING-TO :

It is a very simple matter to lay a fore-and-aft vessel to. But in the first place you should find out in reasonably good weather what sail she will lie-to best under. Knowing this, snug her down to it before bringing her head to it. The best sail is that nearest amidships; but some boats require more after canvas and some more forward. No rule can be laid down, each vessel in this respect being peculiar to itself. When ready, watch your seas until after a big one has past you; get a smooth, then put your helm down easily and bring her to with a long sweep. The amount of sail she wants is enough



to keep her just moving ahead, so that there will be steerageway and no more. Use plenty of oil while rounding to and afterwards, if the seas are cresting and breaking.

#### LEE SHORES:

Unless the weather is fine and you are well acquainted with them, keep off lee shores. A lee shore is a bad place to go aground, and it is a bad place to be caught on if a heavy blow comes.

#### WEATHER SHORE:

In strong winds and heavy weather it is always best to get in under the lee of a weather shore, and to keep it aboard as long as possible. You should figure to do this in mapping out runs from place to place. In running a weather shore keep working your boat up to it, especially in the bights between headlands. This will enable you to choose your own distance in rounding the outermost points and prevent being driven off shore.

#### CAUGHT ON A LEE SHORE:

If caught at anchor close on a lee shore where you are too close to wear with safety, you can get your anchor and cast your boat in the right tack by this method:

Make sail; then when all is ready heave in until half scope; then get a bucket with a line bent to it, carry this line outside the rigging and the bucket as far forward as possible. Let one hand hold it ready to cast overboard on the side you want to fill on. Haul in your anchor quickly; when broken out, heave the bucket overboard, and give a slow, steady pull on the line from as far aft as convenient. This will hold her stern and the bow will swing off in the opposite direction. If you have no bucket, use a hunk of ballast, and slip it when her head is round.

#### MISS-STAYING IN A SEAWAY:

The cause of this is generally carelessness or haste. Sufficient way is not on the boat when the helm is put down, owing to her being too near the wind. Always give a boat a good full before putting the helm a-lee. You should watch the sea and make the move when there is a smooth flat spot between the waves. If there is any doubt of the boat's getting round it is better to wear her.

#### MISS-STAYING IN A SEAWAY:

If your boat miss stays in a seaway and gets stern-



REEFING.

way on, don't jam your helm hard over. Keep it amidship, and try and get your headsail a-back; then slowly put your helm over. It is a dangerous practice to jam a helm hard over when a boat is making a stern board in a seaway, as you are liable to damage the rudder or drive her counter under. If a centerboard boat, pull up the board, as this will help her to fall off.

#### CAUGHT ON A LEE SHORE:

If it is too windy and rough to get your anchor, prepare to slip. Get the bitter end on deck and bend a buoy to it. See all clear to cast over. Haul in as much as you dare to, and bend a small line to hawser or chain. Carry this line aft to the quarter outside the rigging. When ready, slip and haul in on the small line. As soon as she swings off cut the spring.

#### SAILING IN A SEAWAY:

When sailing in a seaway don't trim a boat flat. Give her a liberal lift of sheet, and sail her with a good full. Never let her lose way, as your safety depends upon always having control of her motions. Keep a close watch on the water on your weather bow, and judge how to take a wave before it strikes you.

## SAILING IN A SEAWAY :

In sailing a boat in a seaway and heavy breeze amateurs are apt to make two mistakes. One to carry too much sail, the other, too little. In the first place, the boat cannot be kept full; in the second, she hasn't sufficient drive to keep her moving. Carry as much sail as she will keep full and not bury under.

## MIZZEN ON A YAWL :

It is a mooted question among yawlsmen as to whether the mizzen is of use or not when going dead before the wind. If you can wing it—that is, get the boom on the opposite side to that of the mainboom—it is, as it makes a boat steer steadier. But if it is off on the same side as the mainsail it is doubtful if it helps the speed. I have tried the experiment repeatedly and cannot find that it makes any difference in a strong breeze; but it does help in light airs. In a strong wind the boat will do better with the mizzen stowed, is my opinion.

## MIZZEN ON A YAWL :

The handling of this sail seems to be a problem that worries many young skippers. No fixed rule can be

laid down, it depending largely on the shape of the boat, the position and size of the sails. Generally speaking, with the wind forward or on the beam, the mizzen should be sheeted flatter than the mainsail. How flat, depends upon the effect it has on the steering. If the boat gripes, ease it off; if she is slack-headed, haul it flatter. In beating through a narrow channel work it as you do the jib, but exactly opposite; that is, with the helm a-lee haul in flat; as she pays off ease the sheet. In this way you will help the rudder to bring the boat round. The mizzen sheet should be belayed where the helmsman can readily get at it, so that by working the sheet in combination with the tiller he can control his vessel.

#### WORKING TO WINDWARD:

In working to windward in open water for a long distance stand on the tack which looks up nearest to your destination. On this tack the wind is as foul as it is possible for it to be, and cannot shift in either direction without favoring you. Attention should be paid to the probable direction of the shift, and a course shaped that will bring you into such a position as will lift your vessel up and not throw her to leeward of her course. For

instance, if the wind is East, stand on the tack towards the Southeast, because it is probable that the wind will move round with the sun across your bow and be constantly freeing you until you can stand your course on the other tack. This is largely a study of local conditions, and can be mastered only by constant observation of the tendencies of the wind at certain seasons of the year.

#### WORKING TO WINDWARD :

If the wind is offshore, blowing at an angle, so that you can make a long and short leg, keep close under the weather shore, as the wind will draw more favorable there than further out. For instance, if the shore lies East and West and the wind be Southwest, under the weather shore it will haul more to the South, sometimes as much as a point, thus enabling you to lengthen your long leg. Besides, you have the advantage of smoother water.

#### WORKING TO WINDWARD CRUISING :

If the wind is so foul as to be dead ahead it is waste of labor to try to beat a small boat a long distance to

windward. With the best of handling you cannot make more than three miles an hour, and a very good day's work is twenty miles. Probably the next day the wind will come favorable, and you can make that twenty miles in four or five hours. If you are pressed for time and have to do it, take the first of the fair tide.

#### LIGHT SAILS, SHEETING:

Never sheet light balloon or running sails; let them sheet themselves. If you trim these sails the way you do working canvas you will destroy much of their power. To get the sail right, slack off the sheet until the luff trembles, then belay. If you sheet them, the whole after angle becomes a back sail. The object is to get them to pull ahead, not sideways. The minute a balloon sail has to be sheeted aft to make it draw take it in and set your working canvas. You will do better with it.

#### ROUNDING A MARK:

Coming down to round a mark with running sails set, when within fair working distance hoist and sheet your working headsails, if the balloon is not set on the jib-stay. Get your main sheet aft and runners ready; then



when close to the mark take in your spinnakers and balloon. In this way you are ready at once to haul on the wind. If you take in your light sails first you will have them littering up the deck and in the way, delaying getting the working sails set and sheeted, and consequently the boat instead of being able to make a sharp turn will drag off to leeward.

#### ROUNDING A MARK :

If rounding a mark to leeward, always do so before you reach it. In order to do this, if possible, keep away from it some distance, and put your helm down gradually ; then you will not kill the boat's way and will give your crew time to get the sheets flattened down. If you come down and take the mark close aboard and then turn it, you will have to put your helm hard down, killing the boat's way and causing her to sag off to leeward.

#### ROUNDING A MARK :

If another boat is abreast of or overlapping, and will be between you and the mark, try and drop back before reaching the turning stake, so as to let her get ahead. You will lose less by doing so than you will by rounding



RUNNING BEFORE THE GALE.

close under her lee, as once round you can probably free your wind and get clear of her wake by a sharp luff. You have also a chance to cut in if her crew make a fumble of their sheet work; but if you are under her you will have no chance at all.

#### ROUNDING, A WINDWARD MARK :

Before rounding a windward mark, if the next leg is a run, make up your mind which side you are going to carry your spinnaker on. Get the pole along on that side and the after guy passed and hooked on. Then before getting to the mark hoist the spinnaker clean up and hook in the clew. Just as soon as you are round and squared off run the pole out and square it, and break the sail. A good crew should get a sail set in this way in fifteen seconds.

#### TRIMMING :

A vessel to sail her best wants to be kept on a level water line; the minute she shoves her head up or down it kills her speed. This is true of sail, power or any kind of craft. Therefore, in racing, see that your crew keep her trimmed to a level by constantly moving and balancing their weights. If a man goes out on the bowsprit

move a man aft to counterbalance his weight. Never let a bunch of men get forward, as is often done when taking in or setting light sails. It is better to do this work slower and keep the boat properly trimmed.

#### BALLOON-JIB SHEET, TO SHIFT A :

Have two separate sheets rigged with snaphooks. If you come down to a mark with your balloon jib on one side and want to shift it over so as to carry it on the other, before jibing over gather the sail up and roll it out to the stay ; there stop it. Unhook the sheet on that side and hook on the other. As soon as you are round break out. By doing this you don't have the bother of passing the sheet in use forward around the stay and aft again in the other side, all of which takes time and causes confusion. When not in use, keep the sheets hooked to the stay, and fast aft. You can stop the sail with the sheet, using a turn similar to that made round a flag when hoisted in a ball or bundle.

#### SHROUD-PARTING :

If a shroud parts, go right on the other tack ; then get any tackle you can that is idle and set it up in place of the rope carried away. If you have no tackle aloft that is not working get a piece of hawser or large-sized

rope and pass it round the mast above the other rigging. Take it round the spar with a clove hitch and stop the end. Seize a bight in the lower part high enough up to get the watch tackle in between it and whatever you have at the rail to make fast to. Then set it up and rack the tackle. If the chain plate is gone, and you have nothing to make fast to, you can secure the lower end in this way, as I once did. Bore a hole through the deck just inside the clamp, and one through the side just below the clamp. Pass a piece of wire rope through these holes and marry the ends. Into this loop hook your tackle. All boats of any size should have two shrouds on each side.

#### BURST MAIN SHEET:

If your main sheet bursts or the shackle breaks and the tackle gets away, keep the boat as near the wind as possible. Then slack up on the weather topping lift until you can reach the bight. Get this inboard and aft, and haul on it easily, slacking down the throat of the sail at the same time; then the peak. If you have only one lift rove, slack down the throat, and try to get a line on the boom, as far out as possible. If this won't work, cut off the hoops, unship the heel of the boom and run it inboard.

It is a very dangerous situation if any sea is on, and requires skill and courage to master it.

#### MAST CARRIED AWAY :

If you carry away a mast in a seaway get it clear of all gear as soon as possible, as it may smash in your side. If it is rigged with wire shrouds and rigging screws, and you cannot get these loose, saw off the head of the mast just below the eyes of the rigging. If the sea is not too heavy you can veer the broken spar astern and tow it, or else haul it in over the stern and lash it fast. It is better to save the spar, if possible, as it makes it easier to replace it.

#### BURST BOBSTAY :

This is a bad accident, as you are liable to lose your mast. Get the mainsail off of her at once. If you have a crotch, put it under the boom so as to take the weight off the mast until you have it secured. Take your jib or staysail halyards or preventer backstays, hook them to the bits or around the bowsprit close to the cranze, and heave taut. Get the yacht before the wind, if possible. Then make the best job of the bobstay you can. A watch tackle makes the best temporary repair.

## WANT OF SPEED, I :

The want of speed in sailing craft is due to many causes. The most frequent is the result of over-ballasting or to the ballast being in the wrong place. This is especially so in shoal, flat-floored models. Frequently, if a boat prove sluggish, a yachtsman will attempt to improve her speed by adding more sail, and then to carry this sail, will ship more weight. Consequently, the boat is slower and worse-acting than before. If your boat does not seem to be up to her speed, try first by removing a portion of the ballast, and by continually shifting the weights. To try her, sail alongside another boat, of whose comparative speed you are aware, and you will soon find out your boat can be improved in this way.

## WANT OF SPEED, II :

Sometimes the sails are to blame, usually through these not being properly set, owing to the blocks being placed in positions where they cannot properly hold up the spars ; or, having too little draft. Want of draft will cause a boat to be sluggish in light air

## WANT OF SPEED, III :

If shifting ballast or getting better sails will not bring

the boat to her form, try altering the position of the centerboard or mast. Much additional speed is frequently gained by moving the mast or board. You cannot discover the faults of a boat by analysing her design; you must work it out by sailing her, and studying her actions in all weights of wind.

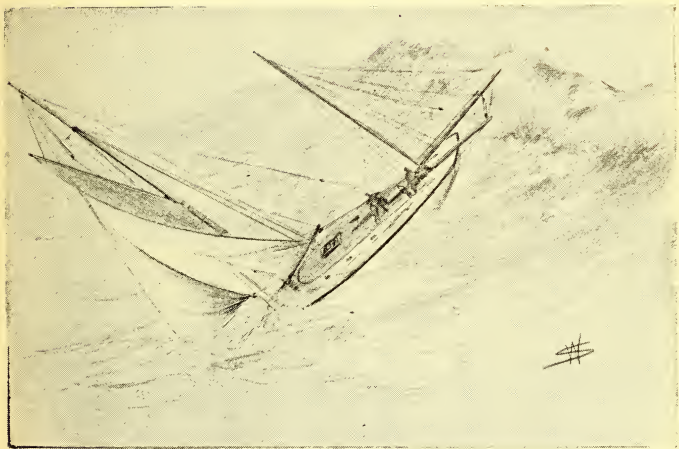
#### SPEED, TO JUDGE:

If you have no log, you can by practice get so that you can gauge a boat's speed within a half knot by watching the water. When running along shore, make a practice of timing the boat between measured points. By doing this constantly you will get so experienced that you can judge by eye very close to the speed she is making. Another way is to time her as she passes floating objects, or while passing a stick dropped over from the bow, count the seconds one, two, three, and so on, until it passes the stern. Knowing the length of the boat by this means you can roughly estimate her speed through the water. If your boat is 25 feet long, and it takes her 5 seconds to pass as object, she is making about 3 knots.

#### TOWING:

When towing a heavy boat or another yacht, with the





TRIPPING.

wind anywhere on the beam, make your towing warp fast on your weather quarter. This will make the load tow easier and your boat will steer better. When towing with the wind aft, keep the warp amidships, by using a bridle from each quarter. If the tow is being steered, veer a long scope of hawser, so as to get a heavy bight; this will ease the strain in a seaway.

#### TOWING ALONGSIDE :

To tow a dingey alongside, make fast to the fore thwart, or to anything, about one-third aft from the stem. In this way you can tow a dingey under the lee while getting men or stores out of her. The same plan is used in towing along a canal or narrow thoroughfare by tracking on the bank.

#### TOWING :

When towing, never make a warp fast so that it cannot be instantly cast off. It is always best to keep a sharp knife handy, so as to be able to cut the line. In a seaway this should always be looked to.

#### TOWING, TO TACK WHEN :

When towing a heavy boat in rough water, or when

the wind is scanty, and you have to tack, place a hand or two on the line to haul in. When ready to put the helm down have them take in considerable slack. At the call "Helm's a-lee!" let go the line and tack your boat on the slack line. This will enable you to get round and have way before the pull of the tow comes on your boat.

#### ANCHORS:

Anchors should be looked to and taken care of just the same as any other gear. The same with chain. If you keep your spare hook below, see that it is a place where you can readily get at it, and not buried in a heap of old ropes, awning stanchions, and other dunnage. I have fully covered this subject and that of anchoring in the book, *On Yachts and Yacht Handling*, which I advise you to read.

#### TO GET AN ANCHOR IN A SEAWAY:

It is sometimes very difficult to get an anchor in a seaway with a hard wind blowing. It can be done in this way: Take a turn with the hawser round the post or bitts. Watch when she pitches. As she descends she will slack up the hawser. Quickly take in this slack and

hold when she scends. In this way you can get it foot by foot, and, when close under, the sea will break the hook out for you.

#### TO GET A LINE ON A FLUKE:

If an anchor is lost or foul you can get a line on the upper fluke in this way, if the water is not too deep: Feel for the fluke with a pole or, better, a piece of iron gas pipe. When found, rest the pipe end on the tip of the fluke. Then send a messenger of rope with slip noose, down the pipe or pole until it falls over the fluke and on the arm. Carefully haul it taut, using the pole to keep it from slipping off until firmly fixed. By this means you can get a back pull on an anchor and shake it loose if caught under a timber or rock.

#### TO SWEEP AN ANCHOR:

If you have lost your anchor, and there is chain or hawser on it, you can recover it by dragging with a grapnel back and forth across where you suppose the hawser is lying. If there is no chain or hawser attached, you will have to sweep for it. Take two boats and pass a weighted line between them, then row back and forth,

dragging the bight of the line across the bottom until it finds the lost hook. Sometimes you can get an anchor by making fast one end of the sweep and rowing round in a circle, paying out the line as you go. Let it sink; then bring both ends together, as fishermen do a net, and haul in slowly. The best sweep is one made with a piece of chain in the middle.

#### TO LAY OUT AN ANCHOR:

Get the anchor in the boat flukes toward the bow, then coil down in the boat about two-thirds of the line to be payed out. Start the boat off and pay out what you have on board. In this way the oarsman has not got to drag a heavy weight of line after him. Use the same method to run out a guess warp to be made fast ashore.

#### TO LAY OUT A HEAVY ANCHOR:

Get two boats and lash them side by side. Put a strong stick or oar across the gunwales and lash it fast. Lower the anchor overboard with a tackle from aloft and swing it in between the boats, ring up. Lash the ring to the beam. When you get to the spot where you want to drop it set the hawser all clear for running and cut the ring lashing.

## TO RAISE A HEAVY ANCHOR :

Lash two boats together. Put a round beam or spar across the gunwales and ship a couple of hand-sticks in it so as to turn it like a windlass. Take the line on the anchor round the spar and turn, winding it slowly up. Keep the beam from rolling out of place by two guys, one at each end, with an eye over it. The guys want to lead from the end of the boat on the side that the rope from the anchor comes up.

## ANCHORING :

Don't anchor on bad bottom without putting a trip line on the anchor. The worst bottom for fouling is one over which boulders are strewn. Also be careful how you anchor in any place where sunken wrecks are likely to be found.

## MOORINGS :

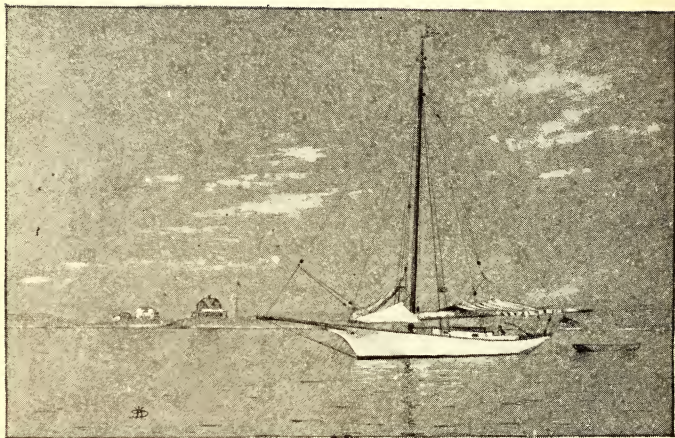
The weight necessary to furnish a secure mooring depends upon the locality, the amount of exposure, the depth and character of the bottom, and the weight and model of the boat. It is always better when on the safe side by using as heavy a mooring as possible. For

ordinary conditions, multiply the length over all of the boat by five, the answer being the weight in pounds that is needed. In exposed situations this weight should be largely increased. The best moorings are mushroom anchors, where the bottom is suitable for their use, as they can be readily recovered when it is desirable to take them up.

#### MAKING A MOORING:

To do this properly requires judgment and practice. Nothing looks worse than to see a man make a bungle of getting a mooring. If he is familiar with his boat, there is no excuse for mismanaging the job. The first thing to learn is how far your boat will carry way when thrown into the wind. This you can find out only by observation and practice. Having discovered this, set a range on shore to use when coming to; one that will place you at about the right distance. A better plan is to calculate your distances by lengths of your boat. If your boat is thirty feet long, and will carry way for six lengths, luff up at a distance of 180 feet. Always, if you have good way on, go directly to leeward of the mooring. Luff with a long sweep, for if you put your helm over too





AT ANCHOR, BLOCK ISLAND POND.



quickly you will kill the boat's way and fall short. If the wind is light, go to leeward and come to the buoy at an angle, with your sheets lighted up; then by trimming and spilling you can baby her up to the mooring. If a boat is coming with too much way on you can kill her speed by shoving the helm hard across, first one way and then the other. Take an afternoon off some day and practice picking up your mooring and you will soon have it down to a science.

#### MAKING A MOORING TO LEEWARD:

This should never be done unless you have to, as it is more likely to get you into a mix-up. But in places where there is strong tide running against the wind it is the only way. Go well to windward, and take enough sail off so that she will just about stem the tide; then steer right for the buoy and pick it up, getting sail down at once.

#### MOORING HOOK:

Get an iron hook made, shaped like the hooks used by women on their dresses, only longer in the shank. Splice a rope to this and then fasten to it and the rope a short piece of stick, long enough to reach from the rail

to the water. When you come to the mooring the bowman can hook this into the ring and hold her until you get the sail down and can pass the mooring warp. A little practice with one of these contrivances will make a man so expert that he can catch the ring every time, even by throwing the hook several feet.

#### MOORING WARP:

If your boat lies at moorings where there is constant jump of sea on, or where the tide and wind keep her yawing about, the warp should be well-armored where it comes through the chock or over the rail. Leather is best for this. A boat will lie much easier if a bridle is used, an end being brought aboard at each bow. Don't leave the warp hanging to the buoy, especially if the water is foul or the bottom muddy. Not only will it rot, but every time you take it on board it will dirty the boat.

#### MOORING CHAIN:

It is best to use a heavy chain, much heavier than is really needed, to stand the strain, as the boat will ride in all ordinary weather to the weight of the chain, and not to the block or anchor. In this way she will take the seas easier and not try the gear so much.

## DROPPING A MOORING:

This is a simple proceeding, if you have plenty of sea room on either side of you. If not, use a cant line, as it will enable you to cast your boat on either tack. To do this take a light line and pass it through the ring on the buoy, and bring both ends aft outside the rigging to the quarter. If you want to go off on the port tack, bringing it on the port quarter, and on the starboard tack on that quarter. Let go the mooring warp and hold on to the cant line until she swings and fills; then let go one end of it and it will slip the buoy ring. If you want to go off before the wind hang on until she comes stern to the buoy, then slip. This is a much simpler and surer way than trying to cast her with the mooring warp.

## MOORINGS:

Most accidents happen to moored yachts, not through the anchor failing to hold, but through the line or chain parting. Frequently the line is too short, and an extra high tide, such as often accompanies a storm, causes the boat to lift the anchor. Most accidents happen late in the season when the gear is rotted after months of laying

on the mud. Mooring gear should be frequently looked to.

#### HAWSERS :

Hawsers, such as are employed on yachts, are very perishable articles, and should be frequently aired. Excessive dryness is very bad for manila rope. To prolong the life of a hawser that is used for anchoring it should be turned end-for-end frequently. If used in water where sewerage or chemical refuse is present, wash the rope thoroughly in clean water before stowing away.

#### CHAIN :

Chain is much cleaner than rope for use as anchor warp where the bottom is muddy. Chain should be frequently examined and tested, as it is liable to develop weak links, which will give way when least expected.

#### ANCHORED IN AN EXPOSED HARBOR :

If anchored in an exposed harbor, before turning in at night reef your principal sail or sails, so that if it comes on to blow you will be in shape to get quickly away.

## ANCHOR LIGHT:

Pay strict attention to the rule requiring a riding light to be set from sunset to sunrise, if in a place where other vessels are likely to come. Hoist it in such a position that it will not be completely shadowed by the mast from astern. If in close quarters, it is as well to have another light aft, or at the end of the main or mizzen boom.

## LIGHTS:

Make a practice of looking to your lights early in the day. Fill and clean them all so they will be ready for instant use. Side lights, riding, and binnacle lights, are too often neglected, and when suddenly wanted are empty and cannot be shown. It is difficult, and sometimes dangerous, to fill lamps in the dark.

## LIGHT, A FLARE:

If sailing in waters where big vessels are frequenting the fair ways, always keep a flare handy during the dark hours. A bunch of rags tied on a stick, with a can of kerosene to dip it into, makes a good flare. In case a vessel does not see your side lights and bears down on you, you can warn her off with a good bright flame.



SHEETS LIFTED.

## LIGHTS, BINNACLE:

The ordinary brass or wooden binnacles made for small yachts are pretty, but of very little use at night. The lamps will not burn if the lid is closed, owing to the heated air driving or keeping out the fresh and starving the flame of oxygen. The best binnacle is a box large enough to hold a small lantern. The lantern should be of brass, not iron. Such lantern can be bought for 25 cents in nearly any hardware store. Get two, keeping one in reserve in case of accident. Bore plenty of holes in the sides of the box. The best oil to use is railway signal oil, which is a mixture of lard and kerosene.

## SIDE LIGHTS:

Side lights should be carried well up the rigging, so as to make them visible as far as possible. On launches they should be put on top of the cabin house. Six feet above deck on a small yacht is about the best height. This is high enough to keep them from being washed out.

## STERN LIGHT:

A lantern should always be kept handy just inside the cuddy doors to be shown for a stern light if a vessel

comes up from aft. If a steamer is coming down on you from anywhere astern pull back the companion slide and let the cabin light shine on the sail; they will be sure to see the reflection and know what it is ahead of them.

#### WATER TANKS:

Water tanks, no matter how small, should be fitted with splash plates, and plenty of them. Else when half full they will be the worst nuisance possible in a seaway. If the tank is large it should not only have athwartship plates, but plates fore-and-aft. In power boats especially they should be fitted in this way, as such craft are generally bad and persistent rollers.

#### WATER:

Drinking water causes more sickness than all other foods combined, and yachtsmen cannot be too careful where they get their supply. If you are not certain sure of the fluid, boil it before using. Also keep your tanks clean, and don't put new water in on top of old that has been in the tanks for weeks, or perhaps months. One time I was going on a cruise and ordered the crew to fill the tanks, but cautioned them not to take the supply from



a pipe that led to the dock, but to go to the clubhouse for it. When my back was turned they decided that the pipe water was good enough, and filled up with it. Consequently we got a dose of iron rust that laid the whole crowd out for three days with an attack that would have turned Mr. Beacham green with envy. If the water gets riley from shaking up in a seaway you can instantly clear it for drinking by putting in the glass a few drops of lime juice.

#### MEDICINE CHEST :

When off cruising, a yacht should have in her locker some simple remedies. Much suffering has been entailed by neglect of this precaution. A roll of bandage, and some absorbent cotton, some Pond's Extract, salve, a few pills, and a diarrhæa medicine, are good things to have. I have known of a man being badly burned, and having to suffer for hours before a port could be made, because there was nothing on board to ease the pain.

#### Log :

A log is a most useful instrument, not only to register distance, but to tell you what your boat is doing under

different sails. There are several logs now made suitable for small craft. By watching the log when you are sailing you can tell whether or not your craft is doing her best. By employing it I have frequently found that a measure that I supposed would add speed has worked just to the opposite. For instance, I have put on more sail, and found by the log that instead of making the boat go faster it has made her move slower. It will also aid you in properly sheeting your sails, so as to get the most effective work out of the canvas. Logs are a great comfort in thick weather, when running for a landfall, as they give you warning of your approach to it, and save a lot of worry. But they must never be implicitly trusted.

#### BAROMETERS :

Always when cruising carry a barometer, and constantly watch it. This instrument does not foretell the weather except indirectly. It is simply an instrument for measuring the weight of the atmosphere. No change of weather takes place without a change of the weight of the air; therefore, when the barometer remains steady there will be no change. If it goes up or down it means that some change will take place. By learning what usually

follows such fluctuations you can employ it to help you in determining or foretelling the future weather conditions.

#### WEATHER:

The study of the weather is a most necessary as well as an interesting occupation. To make a success of it you must constantly observe the barometer, the sky, and the sea. By learning the meaning of the colors in the heavens at sunset and sunrise, and by knowing the different forms of cloud, you can nine times out of ten foretell the weather for the next day or two. The color of the sea and its movements are also a guide. The actions of fish, birds and animals, like whales and porpoises, will also aid you. Nothing should be too minute to escape the seaman's observations, if he wants to become weather-wise.

#### WINDS:

Make a study of the winds in the locality in which you sail. You will find that nine times out of ten they go through the same routine in shifting. By learning the manner in which they change you can take advantage

of these shifts. The winds in summer generally follow the sun in its circuit, until they get back to their proper place. If they go the other way, what is called back, you can never trust them to stay long, and it is usually a sign of bad weather. In sounds and estuaries the wind usually comes in with the flood tide. If this tide makes in the morning the wind will stay all day; if the flood makes in the p. m. hours it will not last long. If the wind comes in strong against the tide look out for a long blow. Offshore winds usually come and go with the sun, reaching their maximum velocity at noon and midnight.

#### WINDS :

After a heavy squall you will usually have a calm spell or an offshore breeze. Winds blowing in from the ocean are weaker on the weather side of an island and heavier and puffy on the lee side. On calm nights a gentle air can often be found close under the land, when there is none in mid-channel.

#### SQUALLS :

Never parley with a squall. Take in sail at once. You can never tell from the appearance of a squall how much

wind is in it. The most innocent-looking are generally the most dangerous. I was once on a yacht when a squall appeared that looked more like rain than wind. All hands except the skipper, an old man, decided that it would not amount to much. The skipper, much to our disgust, insisted upon taking all sail off. We had scarcely got the canvas lowered and gasketed before the squall struck, and laid the yacht over on her side and kept her there until the blast had spent itself. The force of the blow was terrific; probably the air was traveling at the rate of 70 or 80 miles an hour. A large lumber-laden schooner close to had her foresail blown clean away and lost part of her deck load. This taught me a lesson I have never forgotten.

#### SQUALLS:

If becalmed, at the approach of a squall, get the vessel headed toward the point you expect the blast to come from, so that the wind will strike her bow on, and not on the broadside. If the squall looks to be a lasting one, anchor, if in shallow water.

#### SQUALLS, TIME OF:

Squalls on the seacoast generally come off at either

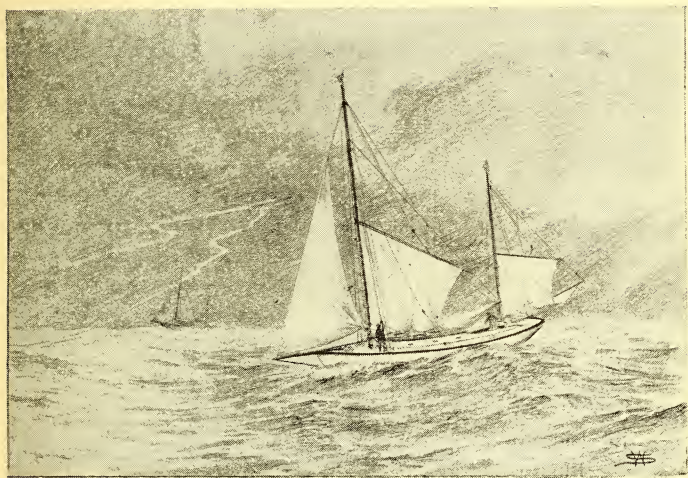
high or low water. If they come between tides they are apt to be bad ones. If your feelings or the barometer tell you a squall is likely to come off, carefully watch inshore for the appearance of the wind. White squalls—that is, sudden blows unaccompanied by cloud or rain, are the most likely to catch you napping. They sometimes precede a sudden change of wind. If you see the water suddenly whiten inshore, look out for trouble, and lower all sail at once.

#### SQUALL, STRUCK BY A :

If struck by a sudden squall, let go your main throat halyards first—not the peak. By keeping the peak up you will be able to luff the boat ; letting go the throat will relieve her until you can get in the wind and get your sail down and muzzled. If you cannot get your sail down, get her off before the wind and haul your main-sail flat amidship ; then steer so as to bring the wind dead aft. This will split the force and give you a chance to take in sail.

#### TIDES :

The time of the tide has much to do with the strength of the wind in sounds, bays, and channels. If a morning



THE COMING SQUALL.



flood brings in the wind it will usually blow all day. Ebb tide in the morning is apt to produce calm or light winds during the summer months on our Eastern seaboard. Thunder squalls are also affected by the condition of the tide, coming off land at either high or low water.

#### TIDES :

Roughly speaking, the tide is one hour later every day. It is theoretically high when the moon bears directly South, either on one side of the world or the other, but actually the friction of the water causes a retardation which delays the wave until sometime after the moon has made its southing.

#### TIDES :

Channels open at both ends have generally very strong tidal currents, but a small rise and fall. The highest tides are in funnel-shaped bays or estuaries directly open to the sea. The day tides are generally higher than those at night.

#### HIGH WATER :

High water does not in many cases coincide with the stop of the current. In places situated upon sounds,



channels and passages, the current continues to flow long after it is high water. The same with the ebb, which runs after the tide has reached its lowest level.

#### HIGH WATER :

Frequently the tide is not found to be high at the time given in the tables, and very often the current does not turn at the hour and minute predicted. This does not prove that the tables are unreliable or worthless. The tide is frequently prolonged or retarded by the wind, which, acting either with or against it, causes the current to run with greater or less force.

#### TIDES :

A correct and extensive knowledge of the tide is essential to good work, if navigating salt water. A constant study should be made of the tides, learn their strength, direction and height. Always carry a tide book, and make a habit of consulting the tables. By knowing the exact time of the current changes and the locations where they change earliest you will save hours of time in getting from port to port. In estuaries and sounds the current generally runs longest in mid-channel and changes on

the inshore first. So if carrying the last of a tide keep in midstream; if using the first of it keep inshore. Eddies can be found by examining the shore line, and drawing conclusions from the trend of the coast. Much distance can sometimes be gained by working eddies if sailing against an adverse current.

#### ATTRACTION :

Floating objects have a tremendous attraction for each other, and if lying becalmed will gradually draw together. This is an influence shared by every particle of matter in the universe, but passes unnoticed upon land where we only see it manifested as weight. It no doubt accounts for many of the collisions at sea in thick weather. Many strandings are also due to this attraction which draws vessels towards the land. In sailing at night or in thick weather along a coast, this force should be allowed for. It is most likely to be felt on high, bold shores, and least on low, shallow ones. It is this attraction that causes your dingey on a still night to insist upon lying against the stern or side of the yacht.

#### WORKING CRAFT AND STEAMERS :

Yachtsmen should never unnecessarily bother coasters

or steam vessels, or any craft that is on the water for business. A yacht can be easily cast from tack to tack, whereas it is a laborious job to turn a heavily laden schooner round. But if you are not going to insist upon having the right of way always tack or shift your helm in plenty of time, so that the other man can know what you are about. If you decide to stand on, do so, and don't balk at the last moment when close aboard of the other vessel. It is this indecision which leads to collisions.

#### COASTERS :

The lookout on coasters is generally badly kept, owing to their being short-manned, and sometimes to carelessness. At night and in foggy weather keep out of their track, if possible. Also, keep out of the way of tugs towing barges, as they are bad customers, who pay little or no attention to the rights of small craft. Large steamers are as a general thing very carefully navigated, and can be trusted to go clear, if they see you ; but remember that yacht side lights are poor things, and cannot be seen at any distance.

#### ANCHORED VESSELS :

Never try to cross the bows of anchored vessels, espe-

cially sailing craft, unless you are well to windward of them. Trying to shave a jib-boom has cost many a man a spar or a sail. It is always best if there is any doubt of clearing to go under the vessel's stern.

#### UNDERWAY, VESSELS:

Don't attempt to cross the bows of another vessel, especially a larger one, when underway, unless you are certain you can clear her. You will be clear of the other vessel, providing she holds the same course, when you can see her anchor on the further bow. In meeting a large sailing vessel, head to head, don't pass close along her lee side; your boat may become becalmed, soak in, and get a nasty swipe from a boom end.

#### CRUISING:

The rule for a cruiser is to start early and finish early. Map out a run that with the expected conditions you can complete easily in the allotted time. This, doing as many shippers do, starting after the sun is well up and finishing late, is the cause of discontent among a crew. Getting into harbor after dark, hungry and tired, all hands are in a bad humor, and work is neglected or scanted, and the pleasure of the run spoiled. If you have wind, and the

tide is right, get away at daylight and finish your run before sunset; then you will have light to find an anchorage, and get all snug before getting supper and turning in.

#### MAKING A QUICK RUN :

To make a quick run in a sailing vessel wait until you get the conditions favorable and start. Then carry all she will, and push her right through. In this way I have made 120 miles in 24 hours. It is seldom on our Eastern Seaboard that you can make a run like this during the summer season, the winds as a general thing losing their strength after sunset.

#### ACCIDENTS TO MEN :

The principal accident that endangers the life and limb of yachtsmen is that inflicted by the main boom. I have known several men to have lost their lives through being struck by this spar, and have been twice badly hurt myself. A jibing boom comes over with tremendous force, and is likely, if it hits, either to fracture the skull or knock the unfortunate person it hits overboard. In cruising boats the foot of the sail should be cut up sufficiently aft to raise the boom above the head of the man standing in

the cockpit. In very small boats this cannot be done. Another source of danger is the mainsheet. Great care should be exercised in bad weather when handling it. Also, look out for the blocks on the clew of the jib, as they will give you a nasty rap.

#### LEAD LINE, TO MAKE A :

It is no use marking a lead line as seaman do, as not one man in a hundred can ever remember the marks. Again, frequently you have to put a green hand to work taking casts, and he never could tell one piece of rag from another, or a hole in a piece of leather from one in the water. Get a good-sized piece of corded rope, like that used for window weights, measure of either five or ten fathoms. Ten is best, if you intend to cruise far. At one fathom clove hitch a short piece of marline round the line and tie one knot in the end. At two fathoms two knots and so on. In this way the greenest greenhorn can tell by simply feeling with his fingers. I use a line like this, and can tell in the darkest night just what the cast is.

#### LEAKS :

Leaks are most dangerous in the middle body and least

dangerous at the ends. but the latter are most difficult to find and stop. Sometimes a small leak may have its outside opening far away from where it appears inside. This is especially so if it comes through the bow or stern timbers. It is seldom that a leak can be stopped from the inside, although it may be temporarily checked. You should always carry a small calking iron, some cotton, a piece of sheet lead, copper or rubber, for use in stopping leaks.

#### LEAKS :

Centerboard boats, if old or not properly built, will leak constantly, especially if they are hard-pressed. They should be thoroughly looked to before being put overboard in the spring, and any bad places cleaned out and re-calked. The king bolt should also be removed and re-packed. Another source of leaks is the rudder port. In many boats this opening is not carried high enough, and in bad weather the sea slops in through it. It should be boxed in and carried up to the deck.

#### LEAKS :

Frequently a boat will leak in her topsides when heeled down, causing a lot of annoyance, as water running in



HOVE TO.



there is apt to wet the bedding, etc. These leaks are sometimes the effect of straining, owing to poor construction. At other times they are due to sun exposure. If a vessel is allowed to lie constantly with one side exposed to the rays of the sun her plank will dry and open up. If a boat is not put into commission early in the spring she should be kept well-covered up to prevent this.

#### LEAKS:

Leaky decks are difficult to make tight, and are the worst possible nuisance. Wooden decks on small sailboats cannot be kept tight, unless they are covered with canvas and kept well-painted. Wherever the canvas is pierced, be careful to see that the cloth is carried well up and closely tacked to the object that goes through it. If a bolt or screw for a fairleader or hook passes through have a wide washer at the base and screw it down hard. Around the mast at the partners use a coat made of sheet lead.

#### LEAKS:

A very common place for leaks to develop is in the rabbet between the garboard and keel, just under the mast. This is due to the downward thrust and working

of the spar. If a boat persists in leaking there, lengthen the mast step so as to distribute the strain over a larger space. Our modern plank-keel boats are liable to develop cracks in the plank, which will only leak when underway, and are difficult to discover, as they close up when the boat is at rest. If the leak is bad it can be readily found by hauling the boat out, filling her bilge with water and watching where it drips out.

#### LEAKS, STOPPING:

You can sometimes stop or check a leak by calking from the inside, if you can get at it; but great care should be exercised in driving the cotton not to push it in too hard, as you may drive out what calking is in the seam, and make the leak worse. Holes, if they can be got at from the outside, can be covered with sheet lead, copper, or a piece of rubber boot leg. In an emergency the same can be used inside to check the flow. Barge men frequently use horse manure to stop leaks in the seams when near the water line; they throw it overboard and let the water draw it into the crevice. I have checked a leak by running a boat on a bar of soft sand, thus getting sand in the seam.

## LEAK, TO FRAP A :

If you get a hole in the bottom from striking a rock or other obstruction, and cannot put the boat ashore on a safe place, you can check it enough to keep her afloat by what is called frapping. Take a sail or large piece of canvas, and fasten a line to each of the four corners, then on the inside of the canvas sew a lot of oakum or cotton so as to make a wad big enough to completely cover the hole and a large space around it. Pass two of the lines under the boat and bring them up on the side opposite to the one the leak is on ; keep the other two on the side the leak is. Work the canvas along until it covers the hole, and then haul all the lines taut, and make fast, the pressure will force the wadding into the hole and check the inflow of water until you can lay the boat ashore.

## SCUPPER-PIPE LEAKING :

If you get a bad leak in the scupper pipe, and cannot get at it from the inside, the following method is a quick and sure way of stopping the inflow of water : Cut a round disk of wood about five times bigger across than the outside opening of the pipe. Bore a hole in the middle of this disk just small enough to pass a strong

cord through and knot. Then on inside of the disk fasten a good big wad of cotton batting, or oakum; this you can do with tacks, thread or glue. I have used thick paint and cotton wadding pulled out of an old quilt. When the disk is ready, take another line and weight it with a sinker, drop it down the scupper pipe until it hangs outside, then fish it up with a boat hook and bring the end on board. Marry the end of this cord to the cord attached to the disk. Then haul the cord in through the pipe until the disk comes up against and closes the scupper hole. By taking a stick and making a windlass of it you can roll the cord up tightly and secure the disk so it will not slip.

#### LOOKOUT REPORTS:

The lookout should examine the side lights, at least every half hour, and report to the man aft in command their condition. He should also see that the set of the headsails do not cover the lee light. If so, be prepared to show it clear if a vessel approaches on that bow.

#### SIDE LIGHTS:

The side lights should be kept clean and the lamps

properly trimmed. Use signal oil in them. After lighting the lamps below place them in the lanterns, and let them burn for some minutes with the door open. This will dry out the moisture and allow it to escape. If you don't do this, your glass will cloud with watery vapor. The cause of these lights refusing to burn is generally want of air, owing to overheating. The gas inside preventing the fresh oxygen from entering.

#### WORKING FORWARD AT NIGHT :

If you send a man forward of a rough dark night, put a light line around him and have it fast aft, or else have another hand hold it. This should always be done if a headsail is to be taken in, as more men are lost off the bowsprit than from any other spar.

#### LOOKOUT :

Always at night, if sailing in waters frequented by other vessels, keep a good lookout. If two men are in the watch, have one forward whenever you get among other craft, as it is difficult to keep a close watch to leeward from the cockpit. The helmsman should keep a lookout to windward and astern.

## WATCH TACKLE :

A watch tackle or Handy Billy is most useful contrivance, and should have a place on every cruising boat. It is made of a single and double block, both having hooks, or else the single having a hook and the double an eye. For a small yacht, blocks carrying a 15-thread rope are heavy enough. When stretched to its best there should be at least 15 feet drift between the blocks. This tackle saves oceans of labor, and makes the heaviest job light. If your anchor sticks, Handy Billy will bring him to terms. If you get aground, he will give a strong pull on the warp to get you off. If the bobstay breaks, or a shroud parts, he will help to keep the mast in while repairs are being made. You want good, strong blocks, as there is a tremendous strain when all the beef is on this tackle. Keep Handy Billy in a safe and easily accessible place, and he will pay you well for his lodgings.

## TACK, WHICH :

This is something that many men get sadly mixed on, and consequently are frequently violating the rules of the road. A vessel is on the starboard tack when her boom is on the port side and the wind is blowing on her

starboard side. She is on the port tack when the boom is on the starboard side and the wind is blowing on her port side. Not only are there men sailing who in an emergency cannot tell the port side from the starboard, but who do not know their right from their left hand. One day I was watching a sergeant drilling a squad of recruits. He said to me, "would you believe it, half these men don't know their right from their left hand." Upon my questioning this, he suddenly commanded them to raise their right hands, two lifted the right, one the left, and the other three looked doubtfully at both for some seconds before raising the right one up. You can always know when you are on the starboard tack in this way: Standing at the helm and facing forward, if your right hand is on the side from which the wind is blowing you are on the starboard tack. When I was a boy, and even to-day in an emergency, I always tell my right hand by thinking which hand I would throw a stone with.

#### OFF THE WIND:

When a vessel is sailing off the wind the tack is determined by the position of the main boom. For instance, if a schooner or yawl is running wing-a-wing with the

main boom off on the port side she is on the starboard tack.

#### RIGHT OF WAY:

A sailing vessel has the right of way over all steam or power vessels, except when she is the overtaking craft; then she must keep out of the way of the vessel overtaken. A "steam vessel" in the eyes of the law is any vessel driven by machinery, no matter of what kind or sort, and includes all gasoline, kerosene and electric boats. An auxiliary, if using her engine, is a steam vessel, and must keep clear of sailing craft, no matter whether she has sail set or not. Sailing craft must keep clear of rowboats.

#### SWIGGING A TACKLE:

When taking a swig on a tackle, in order to get a sail up, especially on the lee side, if the boat is heeling be careful to get a firm brace of your body or a good leg hold. Sometimes the pin will fly out, or your turn on the cleat slip, and you are liable to go overboard backwards.

#### REEF POINTS:

The best way is to have the different sets of points



made of different kinds of line. Use cotton for the first and manila for the second. Then when tying in, especially in the dark, you will be sure to get the right ends knotted together.

#### PEAK HALYARDS:

The hauling part of the peak halyards is usually brought down and belayed on the starboard side of the mast. I bring mine down on the port side, for this simple reason: The terms peak and port begin with the same letter, and thus it is easy for a green hand to find the right rope. Frequently a trained hand in a moment of excitement will let go the wrong halyard, but by remembering the letter P you are less likely to make the mistake.

#### CREW AND SKIPPER:

If you are to command, show yourself a leader, not by talk, but by action. Always be first in everything that requires skill or courage. Thus you will win your crew's respect, and if they respect you they will obey you. Never send a man to do a task you fear to do yourself. If there is any danger, lead, and your men will follow; but you cannot expect men to risk their limbs or lives

to save your vessel if you shrink from the position who have the most at jeopardy. Don't put all the hard work on the crew; do your share of it; also the dirty jobs. If you are working watch and watch, be sure to be the first on deck when your watch is called, and don't leave it, unless you are sure that the yacht is in safe hands and that your care and skill is not needed.

#### SKIPPER'S DUTIES:

It is your duty as skipper to know and see everything that goes on. If you order the lead to be hove see that it is. See that the lights are attended to and ready. See that the course is being properly steered. Before turning in at night inspect your riding gear, likewise when coming to an anchor. Don't trust to a report, go and look at it. See that the pump is used and the vessel kept clear of water. Make a practice of doing these things until they become a habit.

#### SKIPPER AND MATE:

If you have a second in command, and he is a man who understands his work, if you place him in charge of the deck don't be constantly interfering with him. If he is not competent to take charge of the yacht, he has

no business to be where he is. If you put confidence in a man, and he is worthy of it, it will strengthen him and enable him to do better work all along the line.

#### STANDING ORDER TO MATE :

My standing order, and one that I always enforce, is this: When in charge of the boat no reefs are to be shaken out or extra sail made without my order; but sail can be taken in or reefed at any time without waiting to call me.

#### CREW, DISCIPLINE :

In order to insure safety, comfort and good work, you must enforce a certain amount of discipline upon your crew. You can only do this by showing that you are amenable to it. You cannot expect men who are sailing with you for pleasure to obey orders or respect rules if you do not obey and respect them yourself. This is the prime fault with many young skippers. If you shape your own conduct according to your rules you will find that your crew, if they are any good, will do likewise. But do not make foolish rules or issue unnecessary orders; the less you restrict and domineer the better you will get along with your hands.

## INJURY TO SAILS:

Sails are most often torn or split through carelessness in tying in the points when reefing, or not untying when shaking out. The first man will tie his points hard, the second slack, consequently bringing undue strain on one cloth. All the points should be tied with as nearly equal strain as possible. Another cause is allowing sails to fall and lie over pointed things, like oarlocks, anchor stocks and belaying pins. Somebody steps or hauls on the sail and the point goes through.

## MENDING SAILS:

If you have a sister, or know somebody else's sister, get her to show you how they herringbone or darn a rent, such as they frequently have in their clothes. This knowledge will enable you to mend a rent in your sail, and perhaps save the canvas from being torn to pieces. A small hole in a sail can be temporarily mended with court plaster. If the sail rends and starts to split up the cloth put in a safety pin at top and bottom of tear until you can get at it with a needle. Always carry a spare yard or two of canvas when cruising, as it will frequently come in handy for mending and other purposes.

## KNOTTING AND SPLICING:

Every young yachtsman should learn to make the simple knots and splices. Nothing looks worse than to see on a boat a lot of rigging that is knotted or fastened together in a lubberly fashion. There is no need of learning the fancy knots, unless you want to, but you should know how to make the following knots, etc.:

Square or reef knot,

Figure eight,

Overhand,

Fisherman's bend,

Carrick bend,

Clove hitch,

Half and whole hitch,

Bowline,

Bowline-on-a-bight,

Sheet-bend,

Rolling hitch,

Wall and crown,

Sheep-shank,

Short splice,

Sailmaker's splice,

Cut splice,

Eye splice,  
Whipping, common,  
Whipping, Spanish,  
Serving,  
Mousing,  
Plain, stitching,  
Herringboning.

#### WASHING DOWN :

A boat's deck and cockpit should be thoroughly washed at least once a day. Nothing looks worse than a dirty deck. Wooden decks should be washed before the heat of the day gets on them: Canvas decks can be scrubbed at any time. If on salt water, always take advantage of a rain and give your decks a good hard scrubbing to get the salt off. If you have a crew, teach them to wash down the first thing every morning, and see that they do it

#### KEEPING CLEAN BELOW :

The first lesson to learn on a yacht, and the first to teach your crew, is that there is a place for everything, and that everything must be kept in its place. If they take anything out to use make them put it back at once

in its place just as soon as they are done with it. Make every man keep his berth tidy, his clothes put away, and his bedding properly aired and folded. Teach them not to throw cigarette butts, tobacco and match sticks on the floor, and to spit overboard and not on the deck or in the cockpit. Don't leave dirty dishes about. Keep your cabin just as tidy as you do your deck.

#### TOOL BOX :

Every yacht should carry a simple kit of tools with them. You can always make temporary repairs, and sometimes save yourself expense, worry and toil. Have a box for them where they can be easily got at. You don't want fine tools, as they will soon be ruined by the dampness. The following is a list of what is necessary for a cruising boat :

Hatchet,  
 Monkey wrench,  
 Small saw,  
 Cold chisel,  
 Brace and bits,  
 Screw driver,  
 Marline spike,  
 Small vice,

Wire nippers,  
 Grommet set,  
 Sail needle,  
 Sail hook,  
 Twine,  
 Wax,  
 Fid,  
 Piece of sheet copper,  
 Piece of sheet lead,  
 Piece of sheet rubber,  
 Copper tacks,  
 Screws,  
 Nails,  
 Some galv. iron rod,  
 Wire,  
 Screw eyes.

#### BOS'N STORES :

Don't have more than two or three sizes of rope in your rig, if you can help it, and carry a spare coil of a few fathoms of each. Also, have spare fittings, so if anything carries away you can replace it. Here is a short list :



Blocks,  
 Shackles,  
 Pins for same,  
 Cleats,  
 Rope,  
 Marline,  
 Hambroline,  
 Canvas,  
 Lacing,  
 Paint,  
 Varnish.

#### PUMP:

Every yacht, no matter of what size, should have a good pump fitted to draw from the lowest part of the bilge. If a full-decked cabin boat, have the pump put in through the deck, and not through the cockpit floor. Builders like to put it in the latter place, as the work is easier. In consequence of its being there the dirty water is pumped into the pit and makes it wet and nasty. In an open centerboard boat put the pump at the after end of the trunk and pump into it. Keep the pump well clean. If you do not use the pump daily, to keep the

leather on the sucker in good condition wrap it about with an oiled rag. A small portable pump is very useful to completely dry out the bilges.

#### PUMPING:

If the boat has a leak, make it a practice to try the pump every morning before washing down. Keep the water out of her, so that when she heels down it won't run up into the lockers and wet things. A good knock-down will distribute a few buckets of bilge water around a cabin in a way to make things damp for weeks to come.

#### BALLAST:

If you use inside ballast of any kind do not lump it in heaps along the keel; spread it out as much as possible over the bottom. It should be spaced in the middle half of the boat, leaving the ends empty. No rule can be laid down for placing weight in a boat; you must experiment and find out how much and where to put it. Remember, that too much ballast is as bad as too little.

#### BALLAST, KINDS OF:

Inside ballast is either lead, iron or stone. There is no question but what stone is the best ballast, so far as

the effect is concerned, and lead the worst. Lead has the advantage of being always worth its money, second-hand lead bringing nearly the same price as new. Old iron is of little or no value. Lead stows snugly and is clean. Iron is very dirty, and the rust from it is a nuisance. The disadvantage of stone is that you cannot secure it. Inside ballast should be secured so as not to shift in case the vessel gets on her side. Heavy ballast should rest on the frame and not on the plank.

#### BILGES :

The cause of many yachts smelling below is dirty bilges. They are never properly cleaned from one season to the other. Before putting the yacht in commission the bilges should be thoroughly searched, cleaned and washed out, all the limbers poked open so as to allow the water to flow to the pump well. If the boat does not leak enough to keep her bilges sweet, water should be poured in at least once a week and pumped out again. Don't sweep dirt or other rubbish into the bilge; it is liable to get into the pump and choke it.

#### GASOLENE PIPES :

To make the joints of pipes carrying gasolene or kero-

sene tight use common yellow soap. These pipes if used to carry either of these fluids to a stove should be frequently examined, so as to prevent leakage. If gasolene leaks into the bilge, flood it with water and pump out before making any light below decks.

#### LEAD LINE:

Keep your lead line where it can be instantly laid hands upon. For a small boat a five-fathom line is long enough, with an extra five that can be bent on in case of need. A three-pound lead is plenty heavy enough.

#### KNIFE:

Always keep about your person a sharp knife, so that you can get hold of it without delay. Many a man has lost his life for want of a knife. It is best when cruising to carry a sheath knife, as they are handiest.

#### OARS:

Always carry a large oar on deck and a pair of spare ones for the dingey stowed below. It is also well to have at least two pair of spare oarlocks on board.

## LASHINGS AND STOPS :

Take some 6, 9 and 12-thread manila rope and cut it into 3, 5 and 8-foot lengths. Put an eye-splice in one end of each length and whip the other end. These short pieces are always of the greatest use, and will save much time and trouble. They can be employed for many purposes, and are especially handy for gasketing sails.

## STANDING-BY :

It is the duty, and should be the pleasure, of every yachtsman to stand-by another yacht when in distress, or in need of any sort of help. It is always best if you see a boat in a predicament to stand-down to her and offer your services, even if they are not needed; it will generally be appreciated as an act of courtesy and good will. And all yachtsmen should receive such offers in the spirit in which they are advanced, and not as some do, if they do not need assistance, give a jeering or discourteous reply. I have been fairly insulted several times by skippers because I have offered my aid to get them out of a predicament, my advances being considered to be a reflection on their skill and ability. Power-boat skippers can do much to make yachting pleasant, by

offering a tow to becalmed sail-craft men. The little attentions do much to establish a feeling of perfect comradeship that is so essential to the making of a sport.



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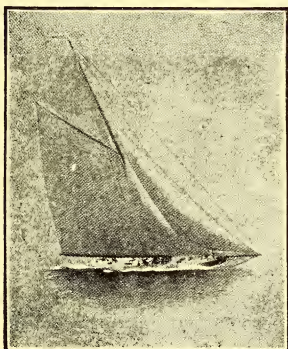
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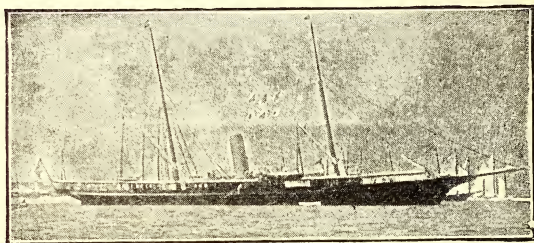
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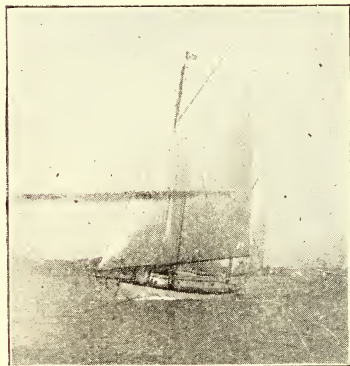
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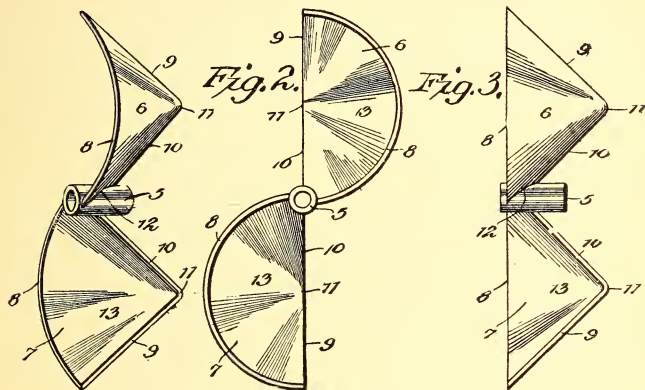
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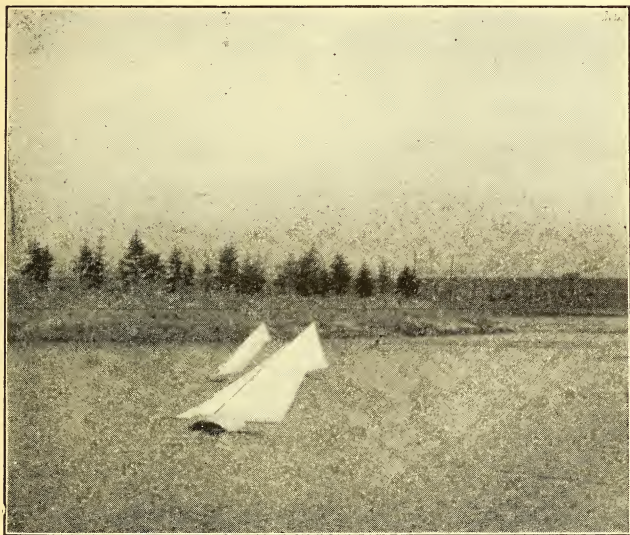
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